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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/667,502	09/22/2000	Masahito Kobayashi	197399US2	9729

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EXAMINER

KURIAN, ROSHNI

ART UNIT PAPER NUMBER

2829

DATE MAILED: 07/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/667,502

Applicant(s)

KOBAYASHI ET AL.

Examiner

Roshni Kurian

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-14 and 19 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 8 and 15-18 is/are rejected.
- 7) ☒ Claim(s) 4 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5, 7-8, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al (US 5642056) and further in view of Rath (US 4758785).

- Regarding Claims 1 and 5, Nakajima et al, in Figure 1, discloses a probe method comprising steps of:
  - moving a main chuck (15) to align an object of inspection (14) on the main chuck with probes (23) of a probe card (22) located over the main chuck;
  - moving the main chuck (15) toward the probe card (22), thereby bringing electrodes of the object of inspection into contact with the probes (column 6, lines 17-19);
  - overdriving (70) the main chuck (15) toward the probe card (22) and controlling (70) the movement of the main chuck in accordance with the measured load; and
  - inspecting electrical properties of the object of inspection by means of the probes (23)

However, Nakajima et al does not disclose measuring a load applied to the object of inspection when contacted by the probes by means of a sensor. Rath discloses, in Figure 2) an apparatus wherein the load applied to the object of inspection (79) by contact with the probes (16) by means of a sensor (50). Therefore it would have been obvious to one of ordinary skill in the art to modify Nakajima et al in view of Rath to incorporate a means to measure the load applied to the object of inspection so as to control the lift system in accordance with measured load (Abstract).

- Regarding Claims 2 and 7, Rath, in Figure 2, discloses a probing method wherein said control of the movement of the main chuck (76) is control of an overdrive based on the measured load, such that the load has a given value (column 5, lines 38-49).

- Regarding Claims 3 and 8, Nakajima et al, in Figure1, discloses a probing method wherein said control (70) of the movement of the main chuck (15) includes steps of obtaining (column 7, lines 14-20) a distortion of the main chuck in accordance with the measured load and correcting at least one of the dislocations between the object of inspection and the probes in X-, Y-, and  $\theta$ -directions (column 8, lines 17-22) in accordance with the distortion.

- Regarding Claims 15 and 16, Nakajima et al, in Figure1, discloses a probe apparatus comprising:

- a main chuck (15) carrying an object of inspection (14) thereon

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- a probe card (22) having a plurality of probes (23) located over the main chuck (15);
- a drive mechanism for moving the main chuck (15) in X-, Y-, Z-, and  $\theta$ -directions (See column 8, lines 17-22); and
- a controller (70) for controlling the movement of the main chuck (15) and obtaining a distortion of the main chuck in accordance with a position where the probes (23) touch the object of inspection (14) and the load measured by means of the pressure sensor.

However, Nakajima et al does not disclose a pressure sensor (55) adapted to measure a load applied to the object of inspection (14) by the probes (23) when the drive mechanism moves the main chuck toward the probe card (22) so that the object of inspection (14) on the main chuck (15) is brought into contact with the probes (23).

Rath discloses, in Figure 2, an apparatus wherein a pressure sensor (50) adapted to measure a load applied to the object of inspection (79) by the probe (16) when the drive mechanism (80) moves the main chuck (76) toward the probe (16) so that the object of inspection (79) on the main chuck (76) is brought into contact with the probe (16).

Therefore it would have been obvious to one of ordinary skill in the art to modify Nakajima et al in view of Rath to incorporate a means to measure the load applied to the object of inspection so as to control the lift system in accordance with measured load (Abstract).

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- Regarding Claims 17, Rath, in Figure 2, discloses a probing apparatus wherein said controller (80) controls an overdrive in accordance with the measured load so that the load has a given value (column 5, lines 38-49).

- Regarding Claims 18, Nakajima et al, in Figure1, discloses a probing apparatus wherein said controller (70) corrects at least one of the dislocations between the object of inspection (14) and the probes (23) in X-, Y-, and  $\theta$ -directions (column 8, lines 17-22) in accordance with the distortion.

#### ***Allowable Subject Matter***

1. Claims 4 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
2. Claims 9-14, and 19 are allowed.

#### ***Reasons for Allowable Subject Matter***

- Claims 4, 9 and 19 recites, inter alia, a probing method comprising the step of measuring a load applied to the polish plate by the probe by means of a pressure sensor located under the polishing mechanism during the overdrive operation.

Claims 10-14 are dependant on Claim 9.

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- Claim 6 recites, inter alia, a probing method wherein a sensor is located on at least one of the lower parts of the main chuck and between an LM guide and an XY-stage on which the main chuck is set.

The art of record does not disclose the above limitations, nor would it be obvious to modify the art of record so as to include the above limitations.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-3,5,7-8 and 15-18 have been considered but are moot in view of the new ground(s) of rejection.

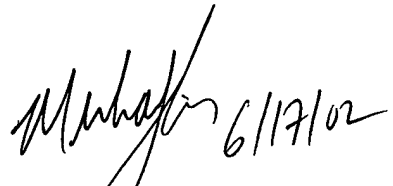
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roshni Kurian whose telephone number is (703) 308-7607. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (703) 308-1680. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7607 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4900.

Roshni Kurian  
June 14, 2002

  
MICHAEL SHERRY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800